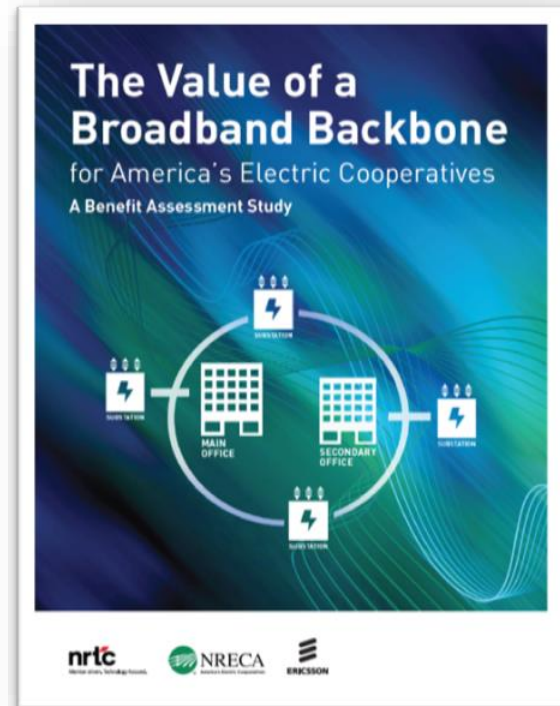


The Value of Broadband for Electric Cooperative Operations

What has changed?

NRECA, NRTC, and Ericsson have partnered on a recent study, *The Value of a Broadband Backbone for America's Electric Cooperatives: A Benefit Assessment Study*, which examines and quantifies the economic benefits of a broadband backbone for electric cooperative operations. When implemented into an electric system, a broadband backbone communications system unlocks the benefits of smart grid use cases, including improved reliability, decreased labor costs, better equipment utilization, more efficient voltage control, and other applications that improve overall grid performance. The study estimates that a broadband backbone can enable \$1.7 million to \$2.9 million in annual economic benefits for a 10,000 member cooperative, and \$10 million to \$16.6 million annually for a 50,000 member cooperative.



What is a broadband backbone?

A broadband backbone is defined as a high bandwidth, low latency data connection comprised of wired and/or wireless technology that connects critically important infrastructure. Importantly, it provides backhaul transport – the delivery of data collected through a co-op's communications network to a central location to support analysis and decision making. A broadband backbone enables several data-intensive use cases (listed below) that optimize electric operations and allow co-ops to adapt to changing consumer-member behavior. Over time, the number of use cases will likely expand, as co-ops continue to innovate and invest in the smart grid and the analytics to support it.

Data-Intensive Use Cases Enabled with Broadband Backbone:

- Demand Management (DM)
- Asset Management (AM)
- Distribution Automation (DA)
- Volt/VAR Optimization (VVO)
- Advanced Metering Infrastructure (AMI)
- Distributed Energy Resources (DER) Integration
- Substation Automation (SA)
- Carrier Cost Replacement
- Outage Reduction

What is the impact on cooperatives?

The Value of a Broadband Backbone study evaluates the smart grid use cases enabled by a broadband backbone, and estimates the cost avoidance or revenue enhancement associated with each of these applications, on a per-meter basis. The study calculates total benefits of \$185 to \$317 per meter. This corresponds to an average of approximately \$2.4 million per year for a 10,000 member cooperative, and \$13 million per year for a 50,000 member cooperative. The value of a broadband backbone for electric cooperatives is demonstrated by its essential contribution to achieving these economic benefits.

Application	Annual Valuation per Meter
DA	\$20–\$30
SA	\$1–\$3
AMI	\$12–\$18
VVO	\$14–\$29
DM	\$88–\$140
Outage Reduction	\$1–\$3
AM	\$45–\$85
DER	\$3–\$6
Carrier Cost Replacement	\$1–\$3

What do cooperatives need to know about it?

This report is a first-of-its-kind study designed to help electric cooperatives better understand how a broadband backbone communications system supports technological use cases that can improve operations and service for consumer-members, and the potential economic value associated with these smart grid applications.

The full report can be found on Cooperative.com at:

<https://www.cooperative.com/topics/telecommunications-broadband/Pages/The-Value-of-a-Broadband-Backbone-for-Electric-Cooperatives.aspx>.

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